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Product Information

Benzophenone

Product Number **B3634**

Storage Temperature -0 °C

Product Description

Molecular Formula: C₁₃H₁₀O

Molecular Weight: 182.2

CAS Number: 119-61-9

Melting Point: 48.5 °C¹

Boiling Point (760 torr): 305.4 °C¹

λ_{\max} : 252, 216 nm²

Extinction coefficient: $E^{\text{mM}} = 17.8, 18.2$ (methanol)²

Synonyms: diphenylmethanone, diphenyl ketone, benzoylbenzene¹

Benzophenone has been prepared historically via the Friedel-Crafts reaction of benzene and benzoyl chloride in the presence of aluminum chloride, and also by the decarboxylation of *o*-benzoylbenzoic acid in the presence of catalytic copper.¹

Benzophenone is a reagent that is utilized in photochemistry research and in various large scale applications. Applications for benzophenone include its use as a photoinitiator, fragrance enhancer, ultraviolet curing agent, flavor ingredient, and polymerization inhibitor. Benzophenone is also utilized in the manufacture of insecticides, agricultural chemicals, hypnotics, pharmaceuticals, and perfumes.¹

The applications of benzophenone in photochemical research include nucleoside oxidation and addition reactions to aromatic aldehydes and ketones.^{3,4} An HPLC-UV method for the analysis of benzophenone that incorporates hydroxypropyl- β -cyclodextrin in the mobile phase has been published.⁵

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in ethanol (100 mg/ml), yielding a clear, colorless to faint yellow solution. It is also soluble in ether and chloroform. This product is insoluble in water.¹

References

1. The Merck Index, 12th ed., Entry# 1129.
2. Parkanyi, C., et al., Physical properties and chemical reactivity of alternant hydrocarbons and related compounds. X. Coll. Czech. Chem. Comm., **31**, 835-851 (1966).
3. Adam, W., et al., A comparative photomechanistic study (spin trapping, EPR spectroscopy, transient kinetics, photoproducts) of nucleoside oxidation (dG and 8-oxodG) by triplet-excited acetophenones and by the radicals generated from alpha-oxy-substituted derivatives through Norrish-type I cleavage. J. Am. Chem. Soc., **124(15)**, 3893-3904 (2002).
4. Bach, T., et al., The [2+2]-photocycloaddition of aromatic aldehydes and ketones to 3,4-dihydro-2-pyridones: regioselectivity, diastereoselectivity, and reductive ring opening of the product oxetanes. Chemistry, **7(20)**, 4512-4521 (2001).
5. Chisvert, A., et al., Determination of the UV filters worldwide authorised in sunscreens by high-performance liquid chromatography. Use of cyclodextrins as mobile phase modifier. J. Chromatogr. A, **921(2)**, 207-215 (2001).

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